

COMMERCIAL STANDARD **CS204-64**

Supersedes CS204-59

WOOD AWNING WINDOW UNITS

WITHDRAWN

A recorded
voluntary standard of the
trade published by
the U.S. Department
of Commerce



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NATIONAL BUREAU OF STANDARDS
Office of Commodity Standards

With the cooperation of the
Forest Products Laboratory
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EFFECTIVE DATE

Having been passed through the regular procedures of the Office of Commodity Standards (formerly the Commodity Standards Division, Office of Technical Services; transferred to the National Bureau of Standards July 1, 1963) and approved by the acceptors hereinafter listed, this Commercial Standard is issued by the U. S. Department of Commerce, effective March 17, 1964.

LUTHER H. HODGES, *Secretary.*

COMMERCIAL STANDARDS

Commercial Standards are developed by manufacturers, distributors, and users in cooperation with the Office of Commodity Standards of the National Bureau of Standards. Their purpose is to establish quality criteria, standard methods of test, rating, certification, and labeling of manufactured commodities, and to provide uniform bases for fair competition.

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Under a similar procedure the Office of Commodity Standards cooperates with industries in the establishment of Simplified Practice Recommendations. Their purpose is to eliminate avoidable waste through the establishment of standards of practice for sizes, dimensions, varieties, or other characteristics of specific products; to simplify packaging practices; and to establish simplified methods of performing specific tasks.

The initial printing of CS204-64 was made possible through the cooperation of the National Woodwork Manufacturers Association.

WOOD AWNING WINDOW UNITS (Third Edition)

Effective March 17, 1964

1. PURPOSE

1.1 The purpose of this Commercial Standard is to establish nationally recognized standard requirements for the materials, construction, and assembly of stock wood awning window and sash units, for the guidance of producers, distributors, architects, builders, and the public; to avoid delays and misunderstandings; and to effect economies from the producer to the ultimate user through a wider utilization of these standard items.

2. SCOPE

2.1 Awning window units as designed and produced by individual manufacturers vary widely in design, layout, sizes, and methods of operation, and do not lend themselves to rigid standardization as to all of these characteristics. This Standard provides minimum requirements for material, construction, assembly, grading and tolerances.

2.2 Essential construction requirements are given for the following:

Awning window and sash frames.

Awning window and sash.

Weatherstripping.

Storm sash.

Screens.

Assembly of component parts into a wood awning window unit.

3. GENERAL REQUIREMENTS

3.1 All wood awning window units labeled or otherwise designated as complying with this Commercial Standard shall conform to all of the quality requirements given herein (see par. 5.1).

3.1.1 AWNING WINDOW UNITS—An awning window unit consists of a frame in which one or more operative sash are installed. The sash may be of the type generally known in the trade as follows:

(a) *Awning Type* in which the bottom of the sash swings outward, or

(b) *Hopper Type* in which the top of the sash swings inward.

An awning window unit may be a combination of one or more fixed (non-operative) sash in addition to the operative sash above described.

The operative sash shall have hinges, pivots and sash supporting arms which permit free operation. Awning window units shall be designed to use an operating device such as, but not limited to, push bars, adjuster or worm gear type. Single sash units may be stacked or adjoined horizontally or both. When so stacked or adjoined, each unit may have its separate frame; or all the stacked or adjoined sash units in the group may have one complete frame with continuous horizontal and/or vertical members.

3.2 MOISTURE CONTENT OF LUMBER—All wood parts of awning window and sash units shall be made from lumber of an approved species (see par. 3.6) that has been dried to a moisture content of 6 to 12 percent at the time of fabrication.

3.3 PRESERVATIVE TREATMENT—All wood parts of awning window and sash units shall be water-repellent preservative treated after machining, in accordance with the latest edition of Commercial Standard CS262; Water-Repellent Preservative Non-Pressure Treatment of Millwork.¹

3.4 WEATHERSTRIP—All operative sash shall be weatherstripped. Weatherstrip shall be made of any suitable material that has durability reasonably adequate for normal and continuous operation. The weatherstrip shall be installed in the frame or sash, or both. It shall be effective to the point that it will prevent (after inside stops and stool are applied and auxiliary latches, if any, are engaged, and before storm sash are installed) air infiltration or leakage in excess of 0.5 cu. ft. of air per minute per linear foot of sash crack perimeter, when subjected to wind pressure equivalent to 25 miles per hour. Sash crack perimeter is defined as the sum of the length of both stiles and both rails of the operative sash using the outside measurements.

3.4.1 TEST SAMPLES—When an awning window unit is tested for compliance with this Standard, the test sample shall be a stock unit produced by the manufacturer or fabricator. The minimum glass size in each sash shall be 54 united inches (width plus height).

3.5 HARDWARE—Each operative sash shall be supported at two or more points by substantial hinges, pivots, or sash-supporting arms which operate freely, permitting the sash to open either outward or inward, in accordance with the practice of the individual manufacturer. The hardware for operative units shall include a holding or friction device which will hold the sash with reasonable rigidity in any predetermined position. All hinges, latches, and operating devices, including screws, shall be made of nonrusting metal or steel protected by a rust-resistant finish.

3.6 SPECIES OF LUMBER—Lumber used for frame, sash, storm sash, and screens shall be of the species listed below. Not more than two species may be used in any one frame, nor more than one species in any one sash or screen:

Incense cedar	Western larch	Sugar pine
Western red cedar	Idaho white pine	Redwood ²
Cypress	Lodgepole pine	Englemann spruce
Douglas fir	Northern white pine	Sitka spruce
White fir	Ponderosa pine	
West coast hemlock	Southern yellow pine	

3.7 FINGER-JOINTS—A quality finger-joint is defined as a series of fingers, machined on the ends of two pieces to be joined, which mesh together and are held firmly in position by a water-resistant adhesive. The parts joined by the finger-joint must be precision machined. The water-resistant adhesive shall conform to Federal Specification MMM-A-125, Adhesive, Casein Type, Water and Mold-Resistant, or be such as may be used for Type II plywood (water-resistant bond), as defined in Commercial Standard CS35-61 (or later edition), Hardwood Plywood, or equal.³

¹Copies of Commercial Standards referenced herein are obtainable from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.

²Where redwood is used, nails and other fasteners shall be either galvanized or nonferrous.

³Copies of Federal Specification MMM-A-125 may be obtained for 10¢ each from the General Services Administration, Business Service Center, 7th and D Streets S. W., Washington, D. C. 20407.

4. DETAIL REQUIREMENTS

4.1 FRAMES.

4.1.1 GRADING—All exposed parts of the frame shall be free from defects except that slight surface checks not over $\frac{1}{8}$ in. in depth and 2 in. in length, an occasional sound knot the size of which is not over $\frac{1}{8}$ in. in diameter, or occasional blemishes or knurls not more than $\frac{3}{8}$ in. in diameter shall be permitted. The unexposed surfaces of these parts shall have no defects that will affect the strength of the frame. Finger-joints, as defined in par. 3.7, will be permitted in all members of the window frame except the sill and the outside casing wider than 2 in.

4.1.1.1 The term "free from defects," as used in this Standard to apply to various parts, shall not exclude the use of pieces with light-brown stain and with light to moderate streaks. In defining defects, grading rules of the Southern Pine Inspection Bureau, West Coast Lumbermen's Inspection Bureau, Western Pine Association, National Hardwood Lumber Association, Redwood Inspection Service and of other associations not mentioned herein that are applicable to species not covered by the above named associations, shall govern on the species covered by the respective association's grading rules.

4.1.2 CONSTRUCTION—In accordance with the standard practice of the individual manufacturer, frames shall be manufactured with the side jambs dadoed or notched to receive the head jamb and sill, or the cross members dadoed or notched to receive the side jambs. The width of such dado or notch shall be not more than $\frac{1}{32}$ in. wider than the thickness of the butting member. The frame opening in height and width, which is controlled by the head jamb, the sill, and the two side jambs, shall be within plus or minus $\frac{1}{32}$ in. of the specified opening size.

4.1.3 SILL—The sill shall be at least $1\text{-}5/16$ in. at its thickest part of awning window and sash units that have two or more sash in one complete frame, and at least $1\text{-}1/16$ in. at its thickest part for awning window and sash units that have a separate frame for each sash and may be machined from solid stock or glued-up stock having a Type I bond as described in the latest edition of Commercial Standard CS35-61. Sill thickness shall be measured between two parallel planes representing (1) the highest point on the top surface of the sill, and (2) the bottom of the sill. These planes shall be parallel to the bottom of the sill. Two piece sills are acceptable.

When main sill and undersill are used (see section on nomenclature and definitions) the main sill shall be at least $23/32$ in. at its thickest part and the undersill shall be at least $1\text{-}5/16$ in. at its thickest point and $3\frac{1}{2}$ in. at its widest point with a tongue and groove connection between main sill and undersill. When main sill is $1\text{-}1/16$ in. at its thickest part then undersill shall be at least $1\text{-}1/16$ in. thick at its thickest part and $3\frac{1}{4}$ in. at its widest point, with a tongue and groove or rabbeted shoulder connection between main sill and undersill. The two pieces shall be nailed together with at least 6d casing nails not to exceed 3 in. from side jamb and spaced not to exceed 10 in. on centers.

When main sill and sill nosing are used (see section on nomenclature and definitions) the main sill and its nosing for awning window and sash units that have two or more sash in one complete frame shall be at least $1\text{-}5/16$ in. at their thickest point; and for awning window and sash units that have a separate frame for each sash shall be at least $1\text{-}1/16$ in. at their thickest point. The parts shall be joined with a double tongue and groove joint with the grooves run on the edge of the main sill and the tongues run on the nosing. The top edge of one tongue shall be flush with the

top surface of the nosing and this surface shall be below the top surface of the main sill. The sill nosing shall be fastened to the main sill by at least 16d cement coated casing nails driven through the edge of the nosing into the main sill with at least $1\frac{1}{2}$ in. penetration into the main sill. The nails shall be spaced not to exceed 14 in. on center with one nail within 3 in. of each end of sill and a minimum of 3 nails per sill. Other fastenings with at least equivalent holding power, as certified by an accredited testing laboratory, may be used when fastening nosing to main sill.

At the option of the manufacturer, a Type I adhesive may be used in conjunction with a tongue and groove or flush joint provided the above nailing schedule is followed. Also, at the option of the manufacturer, units with each sash having its own separate frame may have a sill assembly of a main sill and applied stop with minimum combined thickness of the sill and applied stop of $1\frac{1}{8}$ in. at the thickest part. Bottom side and inside edge of sill are considered not exposed.

4.1.4 JAMBS.

4.1.4.1 SIDE JAMBS—Side jambs shall be at least $1\text{-}1/16$ in. thick at their thickest part for awning window and sash units that have two or more sash in one complete frame, and at least $\frac{3}{4}$ in. thick at their thickest part for awning window and sash units that have a separate frame for each sash with a plus tolerance of $\frac{1}{32}$ in. in either case. However, the side jambs may be $4/4$ lumber provided (1) a casing not less than 1 in. by $1\frac{1}{8}$ in. is applied on the outside edge of the jamb and flush with the inside face so that it forms an angle with the back of the jamb; and (2) a casing not less than $\frac{3}{4}$ in. by $1\frac{3}{4}$ in. is applied on the inside edge of the jamb and flush with the back so that it forms an angle with the inside face of the jamb.

4.1.4.2 HEAD JAMBS—Head jambs shall be at least $\frac{3}{4}$ in. thick at their thickest part for awning window and sash units with a plus tolerance of $\frac{1}{32}$ in. However, the head jambs may be $4/4$ lumber provided (1) a casing not less than 1 in. by $1\frac{1}{8}$ in. is applied on the outside edge of the jamb and flush with the inside face so that it forms an angle with the back of the jamb; and (2) a casing not less than $\frac{3}{4}$ in. by $1\frac{3}{4}$ in. is applied on the inside edge of the jamb and flush with the back so that it forms an angle with the inside face of the jamb.

4.1.4.3 The back side of the jamb and that portion covered by the weatherstrip are not to be considered exposed. All other surfaces of the jamb visible after the unit is assembled shall be considered exposed.

4.1.5 CASING—Both head and side casings shall be at least $\frac{3}{4}$ in. thick, with a minus tolerance of $\frac{1}{32}$ in. Casings shall be at least $1\frac{3}{4}$ in. wide with a manufacturing tolerance of minus $\frac{1}{16}$ in.

4.1.5.1 Exposed portions of casings shall be free from defects, as defined in paragraphs 4.1.1 and 4.1.1.1, on the face and two edges when used in frame walls, or only on one exposed edge and that portion of the face exposed when brick mold is planted for brick-veneer construction.

4.1.6 DRIP CAP—Thickness and width of drip cap may vary among manufacturers, but it shall be at least $\frac{3}{4}$ in. thick at its thickest part and shall project at least $\frac{3}{8}$ in. beyond face of head casing. Drip cap shall be either rabbeted or have water drip groove on under side of front edge, or both. The top and outside edge faces of the drip cap shall be free from defects in accordance with paragraph 4.1.1.

4.1.7 BRACES FOR AWNING WINDOW UNITS—After the frame is completely assembled and the sash installed, a

horizontal center brace shall be applied to maintain an equal opening width between side jambs from head to sill for awning window and sash units that have two or more sash in one complete frame. Frames for all units shall be squared by the fabricator, using a rod to make diagonal corners an equal distance apart, and at least one diagonal brace not less than 24 in. long, shall be nailed across the frame at one corner while in the squared position.

4.2 NAILING—Casing or brick mold not over 25/32 in. thick shall be facenailed to the jamb with 6-penny casing nails or larger; thicker casing or brick mold shall be facenailed to the jamb with 8-penny casing nails or larger. (Nails not exposed may be common.) Or, at the option of the fabricator, machine driven knurled pins may be used in nailing the casing or brick mold to the jamb. The pins shall have a diameter not less than #13 gauge standard wire, and a length, after driving of not less than an 8-penny casing nail. The minimum number of nails or pins shall be as specified below and shall be located as indicated.

4.2.1 On horizontal casings and/or brick mold for awning window and sash units:

NAILS:

3 nails per casing on sizes not greater than 2'0" in width of each sash opening.

4 nails per casing on sizes over 2'0" and not over 3'0" in width of each sash opening.

5 nails per casing on sizes over 3'0" and not over 4'4" in width of each sash opening.

Where casing is thicker than 1 3/8" and nails are larger than 8-penny, 1 nail less per casing may be used.

Head casing shall have one of the above nails at each end and as near to intersection of each head and side jamb as hardware will allow. Mitered corners of casings shall be cross-nailed through edges.

OR

PINS:

3 pins per casing on sizes not greater than 2'0" in width of each sash opening.

5 pins per casing on sizes over 2'0" and not over 3'0" in width of each sash opening.

7 pins per casing on sizes over 3'0" and not over 4'4" in width of each sash opening.

Head casing shall have one of the above pins at each end and as near to intersection of each head and side jamb as hardware will allow. Mitered corners of casings shall be cross-nailed through edges.

4.2.2 On vertical casings and/or brick mold for awning window and sash units that have two or more sash stacked in one complete frame:

NAILS:

3 nails per casing on sizes not over 2'6" in height.

4 nails per casing on sizes over 2'6" and not over 3'6" in height.

5 nails per casing on sizes over 3'6" and not over 5'6" in height.

6 nails per casing on sizes over 5'6" and not over 6'6" in height.

Where casing is thicker than 1 3/8" and nails are larger than 8-penny, 1 nail less per casing may be used.

OR

PINS:

4 pins per casing on sizes not over 2'6" in height.

5 pins per casing on sizes over 2'6" and not over 3'6" in height.

7 pins per casing on sizes over 3'6" and not over 5'6" in height.

9 pins per casing on sizes over 5'6" and not over 6'6" in height.

4.2.3 For vertical casing on awning window and sash units that have a separate frame for each sash and are stacked:

NAILS:

3 nails per each sash in height, with 1 nail being placed within 3" of top and bottom of each sash opening and with 1 nail spaced midway on sash opening 16" high or higher. Intermediate nailing may be omitted on sash openings under 16" high. This nailing also to apply to each edge of mull casing.

OR

PINS:

4 pins per each sash in height with 1 pin being placed within 3" of top and bottom of each sash opening. This nailing also to apply to each edge of mull casing.

4.2.4 When a filler strip (blind stop) is used in the frame assembly it shall be nailed to the edge of the jamb with 6-penny box or common nails (if filler strips are under 3/8 in. thick at the junction with the jamb, 4-penny nails may be used), in accordance with the minimum number specified below, and located as indicated.

On horizontal filler strips:

3 nails per head jamb on sizes not over 2'8" in width of each sash opening.

4 nails per head jamb on sizes over 2'8" and not over 4'4" in width of each opening.

1 nail, as specified above, shall be within 6" of each end of filler strip.

On vertical filler strips:

3 nails per side jamb on sizes not over 3'6" in height.

4 nails per side jamb on sizes over 3'6" and not over 4'6" in height.

5 nails per side jamb on sizes over 4'6" and not over 5'6" in height.

6 nails per side jamb on sizes over 5'6" and not over 6'6" in height.

1 nail, as specified above, shall be within 3 1/2" of head jamb and 1 nail shall be within 3 1/2" of sill.

Or, at the option of the fabricator, machine driven knurled pins may be used for nailing the filler strip to the jamb. The pins shall have a diameter of not less than #15 gauge standard wire and a length, after driving, of not less than 6-penny box or common nail. The minimum number of pins shall be as specified below, and the pins shall be located as indicated:

On horizontal filler strips:

3 pins per head jamb on sizes up to and including 2'8" in width of each sash opening.

4 pins per head jamb on sizes over 2'8" and not over 4'4" in width of each sash opening.

1 pin, as specified above, shall be within 6" of each end of filler strip.

On vertical filler strips:

3 pins per side jamb on sizes not over 3'6" in height.

4 pins per side jamb on sizes over 3'6" and not over 4'6" in height.

5 pins per side jamb on sizes over 4'6" and not over 5'6" in height.

6 pins per side jamb on sizes over 5'6" and not over 6'6" in height.

1 pin, as specified above, shall be within 3 1/2" of head jamb and 1 pin shall be within 3 1/2" of sill.

4.2.4.1 At the option of the fabricator, machine driven knurled pins may be used for nailing the casing or brick mold, filler strip (blind stop) and jamb together in one

operation. The pins shall have a diameter of not less than #13 gauge standard wire and a length, after driving, of not less than an 8-penny casing nail. The minimum number of pins shall be as specified below, and the pins shall be located as indicated.

On horizontal casings:

- 3 pins per casing on sizes not over 2'0" in width of each sash opening.
- 5 pins per casing on sizes over 2'0" and not over 3'0" in width of each sash opening.
- 7 pins per casing on sizes over 3'0" and not over 4'4" in width of each sash opening.

Head casing shall have 1 pin at each end as near to intersection of head and side jamb as balances will allow, and mitered corners of casings shall be cross-nailed through edges.

On vertical casings:

- 4 pins per casing on sizes not over 2'6" in height.
- 5 pins per casing on sizes over 2'6" and not over 3'6" in height.
- 7 pins per casing on sizes over 3'6" and not over 5'6" in height.
- 9 pins per casing on sizes over 5'6" and not over 6'6" in height.
- 1 pin, as specified above, shall be within 5" of head casing and 1 pin shall be within 5" of sill.

4.2.5 Mullion casings, both horizontal and vertical, shall receive twice the number of nails specified above except that size of nails shall be determined by the fabricator in keeping with size and design of mull members. Where a one-piece solid mullion is used, the number of nails shall be the same as for one casing.

4.2.6 All nails used in the assembly of the frame shall be coated. However, when redwood is used, nails shall be either galvanized or nonferrous. Knurled machine driven pins need not be coated.

4.2.7 Each joint between head jamb, sill, and side jamb shall be nailed with at least four 6-penny or three 8-penny box or common nails. Each joint between side jamb and horizontal division member (continuous side-jamb awning and sash units) shall be nailed with at least three 8-penny box or common nails.

4.2.8 The nails used in the drip cap shall be 6-penny box or common nails and shall be spaced not over 12 in. apart and not less than 3 in. from each end. At the option of the fabricator, machine driven knurled pins may be used in nailing the drip cap. The pins shall have a diameter not less than #15 gauge standard wire and a length, after driving, not less than a 6-penny box or common nail and shall be spaced not over 12 in. apart and not less than 3 in. from each end.

4.2.9 Other fastenings with at least equivalent holding power, as certified by an accredited testing laboratory may be used under paragraphs 4.2 through 4.2.8.

4.3 SASH, STORM SASH, AND SCREENS.

4.3.1 MATERIAL—Wood sash, wood storm sash, and wood screens used in awning window and sash units shall be manufactured from a species of lumber named in paragraph 3.6.

4.3.2 WORKMANSHIP—Sash, and screens shall be well manufactured. Both sides of all assembled sash, and screens shall be machine-sanded.

4.3.3 CONSTRUCTION—GENERAL—All sash for units that have two or more sash in one complete frame shall be of not less than 1 $\frac{3}{8}$ in. nominal thickness, and all sash for units that have a separate frame for each sash shall be of not less than 1 $\frac{3}{8}$ in. nominal thickness, with a minus tolerance of 1/16 in. on each thickness. Sash and all tenoned screens shall be well clamped together and all rail tenons carefully pinned with barbed steel pins set through the tenon. All divided-light sash shall have vertical or horizontal bars tenoned to fit into mortise of stiles or rails, and shall have one barbed steel pin inserted at each end of at least one bar. (Machine-driven pins, barbed or smooth, not less than 0.008 sq. in. in cross-sectional area may be used.) Stiles and rails shall have solid stickings. All joints shall be coped and well fitted. All stiles and rails of putty-glazed sash shall have grooves and/or indentations in the putty rabbet. Finger-joints as defined in paragraph 3.7 shall be permitted in storm sash and screens.

4.3.3.1 MORTISED - AND - TENONED CONSTRUCTION—Wood sash, wood storm sash, and wood screens may be made by what is known as mortised-and-tenoned construction. The minimum tenon width shall be two-thirds of the overall rail width with a minus tolerance of 3/16 in. All mortised and tenoned sash and sash screens shall be pinned, in accordance with paragraph 4.3.3 with at least one pin at each end of each rail.

4.3.3.2 SLOTTED CONSTRUCTION—Wood sash, wood storm sash, and wood screens may be made by what is known as slotted construction. The tenon shall be the full width of the rail. All slotted sash and screens shall be pinned, in accordance with paragraph 4.3.3, with at least one pin at each end of each rail.

4.3.3.3 DOWELLED CONSTRUCTION—Wood storm sash and wood screens may be made by what is known as dowelled construction. Stiles and rails shall be bored to receive dowels not less than $\frac{3}{8}$ in. in diameter by 3 in. in length. Dowels shall have glue grooves and/or indentations and be sized for a drive fit. Dowels shall be set in water-resistant glue and extend one-half their length into each stile and rail and be assembled under pressure. There shall be at least one dowel at each joint.

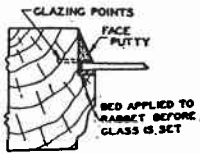
4.3.4 STICKING—The sash sticking may be of any design so long as the glass rabbet for sash is a minimum of 3/16 in. deep by $\frac{1}{2}$ in. wide; and for storm sash, 3/16 in. deep by $\frac{3}{8}$ in. wide.

4.3.5 THE FINISHED THICKNESS of all wood storm sash and wood screens of $\frac{3}{4}$ in. nominal thickness shall be not less than 21/32 in. The finished thickness of all wood storm sash and wood screens of 1 $\frac{1}{8}$ in. nominal thickness shall be not less than 1-1/16 in.

4.3.6 PREFITTING—All operative sash shall be made to operate properly in the frame of the unit in conjunction with the weatherstrip furnished with the unit.

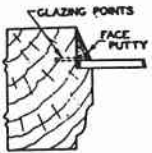
4.3.7 GLAZING—Unless otherwise specified, all sash and storm sash shall be glazed with single-strength "B" glass. The maximum size glass in any sash shall be 76 united inches (width plus height) for single-strength "B" glass, and 100 united inches for double-strength "B" glass. The glass in all awning window and sash units shall be either bedded in putty or glazing compound or be putty glazed on the reverse side, using secondary putty rabbet; or, at the option of the manufacturer or fabricator, they may be adhesive bedded. Regardless of the glazing method used, a positive seal shall be provided between the glass and the wood on both sides of the glass. In addition, all awning sash, and storm sash may be either face-puttied or wood-

stop glazed. In lieu of above, unless otherwise specified, sash may be glazed in solid sticking at time of assembly, after bedding compound has been applied in sash groove. Glazing methods herein provided shall be in accordance with the following:



4.3.7.1 BEDDING—A layer of putty or bedding compound is placed in the rabbet of the sash and the glass pressed onto this bed. Glazing points are then driven into the wood and the sash is face-puttied.

The sash is then turned over and the excess putty or glazing compound that emerged on the other side is removed.

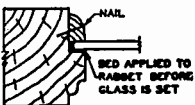


is then filled with putty, the putty being beveled back against the glass.



4.3.7.3 BEDDING, SECONDARY PUTTY RABBIT—After the sash has been face-puttied, it is turned over and putty is run into the secondary putty rabbet, and into any voids that may exist between the glass and the wood parts.

4.3.7.4 ADHESIVE BEDDING—A continuous ribbon or bead of an effective flexible adhesive bedding material is run in the sash rabbet, in a neat manner, and the glass is pressed into the rabbet with sufficient pressure to insure a bond between the glass and the wood throughout the full perimeter of the rabbet. The adhesive material shall be of such nature that the bond between the glass and the wood of the stiles, rails, and muntins and bars, if any, is equal to or greater than that provided by the use of glazing points and wedges, and in addition shall form a water-tight seal. If found necessary by the manufacturer to achieve full contact about the perimeter, one or more glazing points may be used. After the adhesive has developed at least 50 percent of its maximum bond strength according to the manufacturer, the sash shall be face-puttied.



4.3.7.5 WOOD-STOP GLAZING—A layer of putty or bedding compound is placed in the rabbet of the sash and the glass pressed onto this bed. Glazing points are not required.

Wood stops shall be securely nailed in place. The sash is then turned over and the excess putty or glazing compound that emerged on the other side is removed. The width of rabbet and type of wood bead shall be optional with the manufacturer.

4.3.8 INSECT SCREENING—Either aluminum, galvanized steel, or bronze insect wire screening conforming to the latest edition of Commercial Standard CS138, Insect Wire Screening, shall be used on window screens, at manufacturers' option. Fiber glass screening conforming to the latest edition of Commercial Standard CS248 Vinyl-Coated Glass Fiber Insect Screening and Louver Cloth, may be used on 1½ in. screens if applied in a groove with a spline sufficiently pliable to engage the screening and hold it securely in the groove. The mesh of the insect screening shall be 18 by 14, or 18 by 16.

Metal Screening in window screens shall be either rolled into a groove on the face of the stiles and rails or tacked on

the face of the stiles and rails. When screening is tacked, the tacks or staples (and in all instances the brads or staples for applying the molding) shall be of copper or brass where bronze screening is used; of galvanized or plain steel where galvanized screening is used; or of galvanized steel, zinc, tinned steel, stainless steel, blued steel, bright steel or aluminum where aluminum screening is used. The molding on window screens may be either flush or raised. Screen molding shall be mitered at the four corners.

4.3.9 HANGING HARDWARE—When furnished, hanging hardware to secure storm sash and screens, or either, shall be galvanized, cadmium plated, zinc-coated, or prime-coat finished.

4.3.10 OPTIONAL MATERIALS—In lieu of wood storm sash and wood screens, at the option of the manufacturer, insulating lights may be used, consisting of window glass set in a metal rim and sealed with glazing compound. Aluminum-frame screens with 18 by 14 or 18 by 16 mesh screening (see 4.3.8) rolled into a groove in the frame and held in place by a suitably formed spline, are acceptable.

5. LABELING

5.1 LABELING—In order to assure the purchaser that he is getting wood awning window and sash units of the quality specified herein, it is recommended that fabricators, either individually or in concert with their trade associations, issue certificates, or grade mark each such wood awning window and sash unit by a stamp, brand, or label as conforming to this standard. The following wording is recommended for the label:

"This awning window unit conforms to Commercial Standard CS204-64, as developed by the trade under the Commodity Standard procedures of the U. S. Department of Commerce.

Name of fabricator"

6. NOMENCLATURE AND DEFINITIONS

6.1 The various terms used in this Standard are defined as follows:

Awning Window Unit—A unit means a combination of the frame, sash, weatherstrip, operating device, and at the option of the manufacturer, screen and/or storm sash, assembled as a complete and properly operating unit (see par. 3.1.1).

Bar—A bar may be either vertical or horizontal and extend the full width or height of the glass opening.

Casing—Molding of various widths and thicknesses used to trim window openings.

Dado—A rectangular groove cut across the grain of a frame member.

Drip Cap—A molding placed on top of the head casing of a window frame.

Fabricator—The person or firm that assembles all of the component parts into a complete window and sash unit.

Finished Size—The measurement of any wood part overall, including the solid mold or rabbet.

Frame (wood)—A group of wood parts so machined and assembled as to form an enclosure and a support for one or more sash.

Jamb—That part of any frame which, together with the sill, surrounds and contacts the window or sash that the frame is intended to support.

Side Jamb—The upright member forming the side of the opening.

Head Jamb—The horizontal member forming the top of the opening.

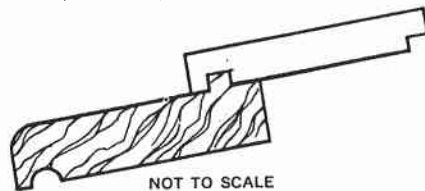
Manufacturer—The person or firm that manufactures any of the component parts of the window unit.

Rails—The cross or horizontal pieces of the frame work of a sash or screen.

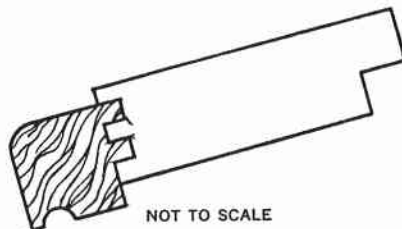
Sash—A single assembly of stiles and rails made into a frame for holding glass, with or without dividing bars, to fill a given opening. It may be either open or glazed.

Sill—The horizontal member forming the bottom of the opening.

Main Sill and Undersill—An upper, thinner member of a two-piece window sill resting on top of a thicker, lower member.



Main Sill and Nosing—A narrower exterior extension fastened to the outside face of a main window sill.



Solid Sticking—A mold that is worked on the article itself.

Stiles—The upright or vertical outside pieces of a sash or screen.

HISTORY OF PROJECT

On January 31, 1955, the National Woodwork Manufacturers Association requested the cooperation of the Commodity Standards Division in the establishment of a Commercial Standard for standard stock wood awning window units, and projected awning and stationary sash units. The draft of the proposed Standard as submitted by the above-mentioned organization was recommended by the Southern Sash & Door Jobbers' Association, the Northern Sash & Door Jobbers' Association, the American Wood Window Institute, as well as the National Woodwork Manufacturers Association.

The Proposed Standard was submitted to interested industry and governmental organizations for advance review, and then adjusted in accordance with the comments received. On July 28, 1955, the recommended Commercial Standard was circulated to the industry for further consideration and acceptance. Comments received from a number of organizations indicated that some further adjustments in the Standard were necessary, and a listing of the suggested modifications was referred on November 15, 1955, to all acceptors of record.

Upon receipt of official acceptances estimated to represent a satisfactory majority of the production, by volume, and a sufficient cross section of the industry to insure successful application of the Standard, CS204-56 was promulgated on March 1, 1956, to become effective for new production on April 1, 1956.

First Revision—The National Woodwork Manufacturers Association submitted suggested changes on five different dates from March 19, 1957, to June 11, 1958. The proposals recommended revision of the requirements for weatherstripping, hardware, braces, glazing, and insect screening, as well as provided for the use of automatic fastening devices. These changes were consolidated, and the views of the Standing Committee and selected manufacturers and Government agencies were solicited on July 21 by the Commodity Standards Division.

Minor adjustments were made based on the consensus of the comment received, and the recommended revision of the standard was widely circulated to manufacturers, distributors and users on November 12, 1958 for further consideration and for written acceptance. Sufficient acceptances from individual organizations were received to insure the successful application of the new standard, and accordingly, it was established on January 27, 1959, as CS204-59, effective for new production from February 27, 1959.

CURRENT EDITION

The National Woodwork Manufacturers Association, Inc., in a letter dated March 9, 1962, requested that CS204-59 be revised to bring its provisions and terminology up to date, and to change the title to "Wood Awning Window Units." Changes were suggested in the requirements for weatherstrip, test sample, hardware, sill, side jambs, casing brace, and nailing, and in general construction. A new grade mark for each conforming window unit was suggested for indicating compliance. A draft of the suggested changes was sent to the Standing Committee for approval. The draft was approved and a Recommended Revision of the standard, temporarily designated TS-5585, was circulated to the trade for consideration on June 6, 1962. A copy was also directed to the Forest Products Laboratory for technical review. A number of acceptances were received, as well as some additional suggestions.

On October 25, 1962 the National Woodwork Manufacturers Association requested a complete revision of the sill requirements in all of the wood window standards, and the new construction provisions were circulated to the trade on February 7, 1963. Additional comment was received, and additional editorial modifications were recommended by NWMA on December 16, 1963 and January 27, 1964.

A number of acceptances from individual manufacturers, distributors, and users of these window units was received, and was considered sufficiently representative of general trade support to warrant publication. Accordingly, the third edition of this Standard, designated CS204-64 and entitled, "Wood Awning Window Units" was announced on February 17, 1964 to become effective on March 17, 1964.

Project Manager: Wm. H. Furcolow, Office of Commodity Standards, National Bureau of Standards, U. S. Department of Commerce, Washington, D. C. 20234

Technical Adviser: L. O. Anderson, Division of Wood Engineering Research, Forest Products Laboratory, U. S. Department of Agriculture, Madison, Wisc. 53705

STANDING COMMITTEE

The following individuals comprise the membership of the standing committee, which is to review, prior to circulation for acceptance, revisions proposed to keep the standard abreast of progress. Comment concerning the standard and suggestions for revision may be addressed to any member of the committee or to the Office of Commodity Standards, National Bureau of Standards, U. S. Department of Commerce which acts as secretary for the committee.

E. C. Swanson, Andersen Corp., Bayport, Minn.
(Chairman)

Ivan H. Ramsey, Curtis Companies, Inc., 114 12th Ave., South, Clinton, Iowa

James G. Boden, Malta Manufacturing Co., Box 397, Malta, Ohio.

R. Gommel Roessner, A.I.A., School of Architecture, University of Texas, Austin 12, Texas (Representing American Institute of Architects)

Milton W. Smithman, Director of Technical Services, National Association of Home Builders, 1625 L St., N. W., Washington 6, D. C.

Cray Coppins, The Whitmer-Jackson Co., 1996 W. 3rd St., Cleveland 13, Ohio (Representing National Sash & Door Jobbers Association)

J. A. Reidelbach, Executive Vice Pres., Home Manufacturers Association, 910 17th St., N. W., Washington 6, D. C.

ACCEPTORS

The manufacturers, distributors, users, and others listed have individually indicated in writing their acceptance of this Commercial Standard prior to its publication. The acceptances indicate an intention to utilize the Standard as far as practicable, but reserve the right to depart from it as may be deemed desirable. The list is published to show the extent of recorded public support for the Standard, and should not be construed as indicating that all products made by the acceptors actually comply with its requirements.

Products that meet all requirements of the standard may be identified as such by a certificate, grade mark, or label. Purchasers are encouraged to require such specific representations of compliance, which may be given by the manufacturer whether or not he is listed as an acceptor.

ASSOCIATIONS (General Support)

American Institute of Architects, Washington, D. C.
American Wood Window Institute, Chicago, Ill.
Associated General Contractors of America, Washington, D. C.
Home Manufacturers Association, Washington, D. C.
Mississippi Retail Lumber Dealers Association, Inc., Jackson, Miss.
National-American Wholesale Lumber Association, New York, N. Y.
National Association of Home Builders, Washington, D. C.
National Building Material Distributors Association, Chicago, Ill.
National Sash and Door Jobbers Association, Chicago, Ill.
National Woodwork Manufacturers Association, Chicago, Ill.
Ponderosa Pine Woodwork, Chicago, Ill.
Western Pine Association, Portland, Oreg.

FIRMS AND OTHER INTERESTS

Adison-Rudesal, Inc., Atlanta, Ga.
American Millwork Co., Oklahoma City, Okla.
American-Saint Gobain Corp., Kingsport, Tenn.
Bermann & Whitney, New York, N. Y.
Andersen Corp., Bayport, Minn.
Benson & Gilkey Co., Merrill, Wis.
Benton, C. J., Co., Royal Oak, Mich.
Beyer Millwork Co., Statesville, N. C.
Bosley & Sons Co., Nashville, Tenn.
Bostest Corp., Ste. Genevieve, Mo.
Boswanger Glass Co., Richmond, Va.
Bunt Lumber Co., Lacona, N. Y.
Case Cascade Corp., Western Pine Division, Spokane, Wash.
Cuddeback-Southern Division, Potlatch Forests, Inc., Warren, Ark.
Cust & Brust, Architects, Milwaukee, Wis.
Dilling Supplies Co., Division of R. F. Trant Distributing Corp., Norfolk, Va.

Cameron, Wm., & Co., Waco, Tex.
Camlet, J. Thomas, Architect & Engineer, Garfield, N. J.
Caradco, Inc., Dubuque, Iowa
Carnahan Manufacturing Co., Inc., Loogootee, Ind.
Central Woodwork, Inc., Memphis, Tenn.
Circle Woodworking Corp., Richmond, Va.
Clarke Veneers and Plywood, Jackson, Miss.
Combs Lumber Co., Lexington, Ky.
Community Builders, Inc., Washington, D. C.
Concord Lumber Co., Inc., Albany, N. Y.
Concord Millwork Corp., Rochester, N. Y.
Cook-Anderson Co., Beaver, Pa.
Crestline Co., Wausau, Wis.
Curtis Companies Inc., Clinton, Iowa
Darby, Bogner & Assoc. Inc., Architects & Engineers, West Allis, Wis.
D'Arcy Co., Inc., Dover, N. H.
Dayton Sash & Door Co., Dayton, Ohio
Delta Millwork, Inc., Jackson, Miss.
Dennis, W. J., & Co., Franklin Park, Ill.
Dierks Forests, Inc., Hot Springs, Ark.
Dolin Co., St. Cloud, Minn.
Dort-Wood Products, Inc., Flint, Mich.
Edwards Sash, Door & Lumber Co., Tampa, Fla.
Evansville Sash & Door Co., Inc., Evansville, Ind.
Fellheimer & Wagner, Architects & Engineers, New York, N. Y.
Flint Sash & Door Co., Inc., Flint, Mich.
Gans, Carl H., Consultant to the Plywood, Veneer & Millwork Industry, New York, N. Y.
Goshen Sash & Door Co., Goshen, Ind.
H & S Lumber Co., Charlotte, N. C.
Harbor Sales Co., Inc., Baltimore, Md.
Harnischfeger Homes, Inc., Fort Washington, Wis.
Hirz, Charles K., Architect, New York, N. Y. (General Support)
Huron Sash & Door Co., Huron, S. Dak.
Hussey-Williams Co., Inc., Ozone Park, N. Y.
Huttig Manufacturing Co., Muscatine, Iowa
Huttig Sash & Door Co., Nashville, Tenn.
International Paper Co., Long-Bell Division, Kansas City, Mo.
Jackson Sash & Door Co., Inc., Jackson, Miss.
Jacksonville Sash & Door Co., Inc., Jacksonville, Fla.
Jamco Window Unit Corp., Northvale, N. J.
Jordan Millwork Co., Sioux Falls, S. Dak.
Keith, L. J., & Son, Fairfield, Ill.
Kemp, Bunch & Jackson, Architects, Jacksonville, Fla.
Kindem, Andrew A. & Sons Inc., Minneapolis, Minn.
Law, Law, Potter & Nystrom, Madison, Wis.
Lee Millwork Corp., Fair Lawn, N. J.
Lester Brothers, Inc., Martinsville, Va.
Loeb, Laurence M., Architect, White Plains, N. Y.
Lumber & Millwork Co. of Philadelphia, Philadelphia, Pa.
Madison Millwork, Inc., Jackson, Tenn.
Mahoney Sash & Door Co., Canton, Ohio
Marathon Millwork Corp., Wausau, Wis.
McPhillips Manufacturing Co., Inc., Mobile, Ala.
Melander, Clifford T., Montclair, N. J. (General Support)
Melnick, J. A., Corp., Northvale, N. J.
Metler Bros., Klamath Falls, Oreg.
Metropolitan Millwork, Inc., Brooklyn, N. Y.
Midland Building Industries, Inc., Indianapolis, Ind.
Miller, Miller & Associates, Architects, Terre Haute, Ind.
Miller Millwork Corp., Charlotte, N. C.
Monarch Metal Weatherstrip Corp., St. Louis, Mo.
Moore & Co., Dallas, Tex.
Morgan Co., Oshkosh, Wis.
Morgan Millwork Co., Baltimore, Md.
Morgan Sash & Door Co., Broadview, Ill.
Morgan Sash & Door Co., Lawton, Okla.
National Lumber, Inc., North Haven, Conn.
National Wholesalers, North Haven, Conn.
National Woodworks, Inc., Birmingham, Ala.
Nebraska, University of, Lincoln, Nebraska
Noelke-Lyon Manufacturing Co., Burlington, Iowa
Norwood Sash & Door Manufacturing Co., Cincinnati, Ohio
Oklahoma Sash & Door Co., Oklahoma City, Okla.
Palmetto Sash & Door Co., Inc., Orangeburg, S. C.
Pease Woodwork Co., Inc., Hamilton, Ohio
Pittsburgh Testing Laboratory, Pittsburgh, Pa.
Pullum Window Corp., Detroit, Mich.
Resnikoff, Abraham, Architect, Bronx, N. Y.
Reid, William H., Architect - Engineer, Whittier, Calif.
Rinn-Scott Lumber Co., Chicago, Ill.
Rock Island Millwork, Rock Island, Ill.
Rolscreen Co., Pella, Iowa
Royal Glass & Millwork Corp., Englewood, N. J.
Sanders Co., Baltimore, Md.
Sash Door & Glass Corp., Richmond, Va.
Sears, Roebuck & Co., Chicago, Ill.
Sierra Mill, Sacramento, Calif.
Smith, Allen A., Co., Toledo, Ohio
Southern Metal Products Corp., Memphis, Tenn.
Southern Millwork Co., Division of Southern Mill & Manufacturing Co., Tulsa, Okla.
Southwestern Laboratories, Fort Worth, Tex.
Southwestern Sash & Door Co., Joplin, Mo.
Stetzel, Inc., Architects & Engineers, Chicago, Ill.
Teachout Sash, Door & Glass Co., Columbus, Ohio
Texas, University of, Austin, Tex.
Throop-Martin Co., Columbus, Ohio
Tooms & Co., Springfield, Mo.
United Wood Products Co., Inglewood, Calif.
Vogel, Willis A., Toledo, Ohio
Welch, Carroll E., Huntington, N. Y.
White Pine Sash Co., Spokane, Wash.
Whittier-Ruhle Millwork Co., Ridgefield, N. J.
Williams, O. B. Co., Seattle, Wash.
Wilson, W. A., & Sons, Inc., Wheeling, W. Va.
Zegers, Inc., Chicago, Ill.

U. S. GOVERNMENT AGENCIES

Army, Department of the Office, Chief of Engineers, Washington, D. C.
Interior, Department of the, Division of Property Management, Office of the Secretary, Washington, D. C.
Veterans Administration, Technical Representative on Standards, Veterans Administration

ACCEPTANCE OF COMMERCIAL STANDARD

CS204-64 WOOD AWNING WINDOW UNITS

If acceptance has not previously been filed, this sheet properly filled in, signed, and returned will provide for the recording of your organization as an acceptor of this Commercial Standard.

Date_____

Office of Commodity Standards
National Bureau of Standards
U.S. Department of Commerce
Washington, D.C., 20234

Gentlemen:

We believe that this Commercial Standard constitutes a useful standard of practice, and we individually plan to utilize it as far as practicable in the

production¹ distribution¹ purchase¹ testing¹
of this commodity.

We reserve the right to depart from the standard as we deem advisable.

We understand, of course, that only those articles which actually comply with the standard in all respects can be identified or labeled as conforming thereto.

Signature of authorized officer_____

(In ink)

(Kindly typewrite or print the following lines)

Name and title of above officer_____

Organization_____

(Fill in exactly as it should be listed)

Street address_____

City, State, and ZIP code_____

¹ Underscore the applicable words. Please see that separate acceptances are filed for all subsidiary companies and affiliates which should be listed separately as acceptors. In the case of related interest, trade associations, trade papers, etc., desiring to record their general support, the words "General support" should be added after the signature.

TO THE ACCEPTOR

The following statements answer the usual questions arising in connection with the acceptance and its significance:

1. *Enforcement.*—Commercial Standards are commodity specifications voluntarily established by mutual consent of those concerned. They present a common basis of understanding between the producer, distributor, and consumer and should not be confused with any plan of governmental regulation or control. The United States Department of Commerce has no regulatory power in the enforcement of their provisions, but since they represent the will of the interested groups as a whole, their provisions through usage soon become established as trade customs, and are made effective through incorporation into sales contracts by means of labels, invoices, and the like.

2. *The acceptor's responsibility.*—The purpose of Commercial Standards is to establish, for specific commodities, nationally recognized grades or consumer criteria, and the benefits therefrom will be measurable in direct proportion to their general recognition and actual use. Instances will occur when it may be necessary to deviate from the standard and the signing of an acceptance does not preclude such departures; however, such signature indicates an intention to follow the standard, where practicable, in the production, distribution, or consumption of the article in question.

3. *The Department's responsibility.*—The major function, performed by the Department of Commerce in the voluntary establishment of Commercial Standards on a nationwide basis is fourfold: First, to act as an unbiased coordinator to bring all interested parties together for the mutually satisfactory adjustment of trade standards; second, to supply such assistance and advice as past experience with similar programs may suggest; third, to canvass and record the extent of acceptance and adherence to the standard on the part of producers, distributors, and users; and fourth, after acceptance, to publish and promulgate the standard for the information and guidance of buyers and sellers of the commodity.

4. *Announcement and promulgation.*—When the standard has been endorsed by a satisfactory majority of production or consumption in the absence of active, valid opposition, the success of the project is announced. If, however, in the opinion of the standing committee or of the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication.

federal register



National Bureau of Standards VOLUNTARY STANDARDS

Action on Proposed Withdrawal

In accordance with § 10.12 of the Department's "Procedures for the Development of Voluntary Product Standards" (15 CFR Part 10, as revised; 35 FR 8349 dated May 28, 1970), notice is hereby given of the withdrawal of the following Commercial Standards:

- CS 120-58, "Ponderosa Pine Doors."
- CS 163-64, "Ponderosa Pine Windows, Sash and Screens (Using Single Glass and Insulating Glass)"
- CS 171-58, "Hardwood Veneered Doors (Solid-Core, Hollow-Core and Panel and Sash)"
- CS 190-64, "Wood Double-Hung Window Units"
- CS 204-64, "Wood Awning Window Units"
- CS 205-64, "Wood Casement Window Units"
- CS 208-57, "Standard Stock Exterior Wood Window and Door Frames"
- CS 262-63, "Water-Repellent Preservative Non-Pressure Treatment for Millwork"
- CS 264-64, "Wood Horizontal-Sliding Window Units (All Sash Operating)"
- CS 265-64, "Wood Horizontal-Sliding Window Units (One or More Non-Operating Sash)"
- CS 266-64, "Wood Single-Hung Window Units"

It has been determined that each of these standards has become technically inadequate, and in view of the existence of up-to-date National Woodwork Manufacturers Association standards for the products covered, revision of the Commercial Standards would serve no useful purpose.

This action is taken in furtherance of the Department's announced intentions as set forth in the public notice appearing in the FEDERAL REGISTER of March 27, 1974 (39 FR 11319), to withdraw these standards.

The effective date for the withdrawal of these standards will be 60 days after the publication of this notice. This withdrawal action terminates the authority to refer to these standards as voluntary standards developed under the Department of Commerce procedures.

Dated: May 30, 1974.

RICHARD W. ROBERTS,
Director.

[FR Doc.74-12838 Filed 6-4-74; 8:45 am]